

Still further aspects of the invention provide SANs as described above in which a component having a selected status, e.g., failed, is depicted in alternate form, e.g., with color highlighting, blinking, or so forth. Segments that contain such a component can likewise be displayed in an alternate form to facilitate operator identification of the component. Related aspects of the invention provide use of such alternate display to highlight portions of the interconnect that have failed or are otherwise have a selected status.

Hierarchical File System Extension Policy

Further aspects of the invention provide a storage area network (SAN) that includes a plurality of digital data processors, each with a file system that effects access to one or more storage devices coupled to the SAN, for example, via the aforementioned interconnect fabric. A process (e.g., executing in the aforementioned SAN manager) responds to a file system over-extension notification from at least a selected one of the digital data processors, e.g., by assigning a further storage device to that digital data processor. The type of response is, more particularly, determined in accord with a hierarchically defined policy inherited, in whole or in part, from one or more hierarchical groups of which the digital data processor is a member.

In a related aspect, the invention provides a SAN as described above in which the policy used by the process in responding to the notification is defined, in part, by a first grouping to which that digital data processor belongs and, in part, by a second grouping to which that digital data processor belongs. Each of the groups is at a respective hierarchical level: the first group at a

first level, and the second group at a second level. The first level is higher then the second, and the first group includes the digital data processor(s) of the second group, as well as at least one other digital data processor.

- 5 A still further related aspect of the invention provides a SAN as described above in which the first group is associated with a first set of attributes and the second group is associated with a second set of attributes, e.g., which form a subset of the first group. The first set defines a default policy for digital data processors included in the first group. The second set overrides corresponding attributes of the first group and, along with the inherited (but not overridden) attributes, defines a policy for second group.

By way of non-limiting example, according to one aspect of the invention, the selected digital data processor can be a member of several hierarchical groups: a domain level group that defines the default file extension policy for all digital data processors in the SAN; a host-group level group that overrides some or all of the domain level attributes for a selected subset of the SANs digital data processors; and a host level "group" that overrides some or all of the attributes for a given digital data processor. By way of further non-limiting example, policy-defining attributes can include whether the file system of the digital data processor is being monitored, whether the file system can be extended, a threshold value for extension, storage devices onto which the file system can be extended, an extension minimum size, an extension maximum size, and an alert interval defining how often event notification is to be provided.

Further aspects of the invention provide a SAN as described above in which the policy extends down to the level of the file system (i.e. a so-called file system level "group"), such that the manager process can respond to a notification from a host digital data processor based on a policy for a specific file system within that digital data processor. That policy can be inherited, in part, from each of the domain level group, the host-group level group, and the digital data processor itself. It can also be based on attributes specified for that specific file system, which override corresponding inherited attributes.

Still further aspects of the invention provide a SAN as described above in which a hierarchical policy as described above is implemented with respect to other components of the SAN.

Display and Management of File System Extension Policy Hierarchy

Further aspects of the invention provide a SAN, e.g., as described above, that includes one or more of the aforementioned host or other digital data processors, each having a file system that effects access to one or more storage devices. Consistent with the discussion above, each processor can be associated with multiple groups from respective levels of a hierarchy, e.g., a first processor group and a second processor group descendant from the first processor group.

As above, the first group can be associated with a default file extension policy (e.g., with attributes assigned outright to that group and/or from a group at a still higher hierarchical level). The second group can be associated with the default policy by inheritance, which association can be overridden in whole or in part by attributes specifically assigned to that level. Continuing the